

# NEW AUSTRALIAN SPECIES OF ERECHTHITOID SENECIO (ASTERACEAE)

by

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## ABSTRACT

Two new species of erechthitoid *Senecio* from Australia, *S. macrocarpus* and *S. cahillii*, are described. This validates manuscript names which have been applied to certain specimens on determinavit slips since 1967.

## DESCRIPTION

***Senecio macrocarpus*** F. Muell. ex Belcher, sp. nov.

*Erechthites hispidula* sensu Benth. Fl. Austr. 3:660 (1866), pro parte, non (A. Rich.) DC. (1838); sensu Black Fl. S. Aust. 4:610 (1929), pro majore parte.

*Caudex* brevis perennis lignosus, radice palari debili et radicibus adventitis numerosis. *Herba* caulibus erectis 20 ad 40 cm altis, saepe dense congestis; caulis arachnoideus superne glabratus, internodiis inferioribus brevibus, internodiis superioribus plus elongatis. *Folia* alterna linearia ad 10 cm longis et 2-4(-5) mm latis, acuta vel mucronata, marginibus revolutis, paginis abaxialibus arachnoideis vel hispidulis; folia inferiora numerosa, dense congesta, infima interdum denticulata; folia superiora parviora laxiora, saepe minute auriculata, apiculata. *Inflorescentia* raro simplex plerumque cymosa capitulis 6-8; pedicelli ad 5-30(-60) mm longi, ascendentes glabrati; bractae et bracteolae ciliolatae longiacuminatae apiculatae, bracteolae numerosae prope apices pedicellorum saepe congestae, arachnoideae vel glabratae, 4-8 mm longae. *Capitulum* magnum 15(-18) mm longum, 15-20 mm latum ubi compressum in siccitate; phyllaria 16-21(-33), glabrata vel glabra, 10-13 mm longa, circa 1 mm lata, linearia, acuminata, marginibus anguste hyalinis, apicibus saepe subroseis. *Flosculi* numero 50-100(-150) varians ad 9-12(-15) mm longi; flosculi extime filiformes (3-4(-5)-fidi pistillati vel staminodiis rudimentaris nonantheriferis, flosculi intermedii filiformes 4- vel 5-fidi staminodiis antherascentibus nonpolliniferis, flosculi medii anguste infundibulares 4- et 5-fidi staminibus 1-5 polliniferis. *Achenia* 4.5-5(-6) mm longa, rostrata, dense pilifera, pili brevissimi cinerascens.

*Rootstock* short, perennial, woody, with a weak primary root and numerous adventitious roots. *Herb* erect, 20-40 cm tall; stems often densely congested, arachnoid, glabrate above, with lower internodes short and upper internodes more elongated. *Leaves* alternate, linear, to 10 cm long and 2-4(-5) mm wide, acute or mucronate, with revolute margins, abaxial surfaces arachnoid or hispidulous; lower leaves numerous, densely congested, the lowermost sometimes denticulate; upper leaves smaller and more lax, often minutely auriculate, apiculate. *Inflorescence* rarely simple, for the most part cymose with 6-8 capitula; pedicels 5-30(-60) mm long, ascending, glabrate; bracts and bracteoles ciliate, long-acuminate, apiculate; bracteoles numerous, often crowded toward the apices of the pedicels, arachnoid or glabrate, 4-8 mm long. *Capitulum* large, 15(-18) mm long, 15-20 mm wide when compressed in drying; phyllaries 16-21(-33), glabrate or glabrous, 10-13 mm long, c. 1 mm wide, linear, acuminate, with margins narrowly hyaline, apices often subroseous. *Florets* 50 to 100 (to 150), 9-12(-15) mm long; outermost florets filiform, (3-4(-5) fid, pistillate or with rudimentary staminodes not bearing anthers; intermediate florets filiform, 4- or 5-fid, with staminodes becoming antheriferous but non-polliniferous; central florets narrowly funnel-shaped, 4- and 5-fid, with 1 to 5 polliniferous stamens. Achenes 4.5-5(-6) mm long, brown, rostrate, densely hairy; hairs very short, greyish.

The achenes of this species are most similar to those of *S. quadridentatus* Labill. but are larger and more hairy. They are very distinct from the short (2 mm long), black, thick-cylindric, densely white-haired achenes of *S. squarrosus* A. Rich.

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*Muelleria* 5(2): 119-122 (1983).

## HOLOTYPE:

*Victoria* — Wimmera district, Walmar Station, 18.ix.1860, *Dallachy* 23 (MEL 22987).

## SELECTED SPECIMENS EXAMINED:

*South Australia* — Near Goolwa, 23.xi.1935, *Cleland* (AD 96736163). Werrabara Forest, 1890, *Gill* (MEL 22974). In plain at foot of mountain, Lofty Ranges, *Mueller* (MEL 22970, exerted styles trifid!). Vicinity of Clare cemetery, 20.x.1961, *Simon* 1598 (ADW 24370, rather immature). Androssan, *Tate* (AD 96744130).

*Victoria* — *Backhous* (K, det. by Bentham as *Erechtites hispidula*). Werribee, 24.ix.1892, *Morrison* (PERTH, CANB 133472). Wendu Vale to Glenelg River, *Robertson* (NSW 27857). Skipton, *Whan* 22 (MEL 22982, NSW 27856). Geelong, ix.1905, *Williamson* (NSW 27855).

*Tasmania* — Woodhole, *Dietz* (MEL 22976). South Esk River (MEL 22977, very immature).

## DISTRIBUTION:

South-eastern South Australia, south-western Victoria, and northern Tasmania.

## DISCUSSION:

This species is the taxon referred to as unnamed in my revision of *Erechtites* and erechthitoid *Senecio* (*Ann. Mo. Bot. Gard.* 43:49 (1956)), in the discussion of the confusion by earlier authors over *S. squarrosus*. I there suggested that it might be a polyploid of *S. quadridentatus*. This remains an attractive hypothesis, although still untested cytogenetically.

In 1956 (l. c.) I decided from Black's description that his treatment of *Erechtites hispidula* applied only to *S. macrocarpus* and excluded *S. squarrosus* (as well as *S. hispidulus*). Since then a careful examination of several copiously annotated sheets of specimens from his herbarium (in AD) has shown me that these sheets include specimens of both of these large-headed Australian taxa. *S. squarrosus* appears in his description only in regard to the leaves: "sometimes . . . distantly toothed". The phrases, "near the preceding" and "achenes as in *E. quadridentata*", clearly apply only to *S. macrocarpus*, hence my present revised citation as "Black pro majore parte". Additionally, the synonymy I gave under *S. squarrosus* for *E. hispidula* (in 1956) should be changed from "non Black" to "Black pro minore parte (ex specimina in herb.)".

The holotype is apparently the specimen cited by Bentham, l.c., p. 661, as "Wimmera, Dallachy". I saw no such specimen at Kew, whereas the several labels on the holotype sheet at MEL have all been initialled by Bentham. The specific epithet recognizes a very appropriate manuscript name given to the holotype by F. von Mueller. "Walmar" is apparently a misspelling for "Wilmer", as a Wilmer Station previously existed north-east of Horsham, in the Wimmera district of western Victoria, and other collecting labels of Dallachy associate "Walmar" with locations close to Horsham (H. Aston, MEL, in litt.).

*S. macrocarpus* most closely resembles *S. squarrosus*, especially in number of phyllaries, but the latter has lanceolate-linear leaves toothed to sublobular rather than linear entire or denticulate, smaller capitula (10-12 mm long rather than 15-18 mm), florets all 5-fid rather than 3- to 5-fid, and different achenes (see above). *S. macrocarpus* is also approached in number of phyllaries by *S. pyrophilus* Zoll. & Mor. ex Zoll., of Java and Timor, but the capitula of the latter are more slender and shorter, and are intermediate in size between *S. quadridentatus* and *S. macrocarpus*, as are its achenes. *S. pyrophilus*, unlike *S. macrocarpus*, also has phyllaries pubescent on their adaxial faces. No other quadridentatoid species (including *S. gunnii* (Hook. f.) Belcher and *S. runcinifolius* Willis), exhibits mucronate leaf apices.

***Senecio cahillii* Belcher, sp. nov.**

*Caudex* perennis; caulis suffruticosus erectus 60-120 cm altus, glabrescens, ramis grandis infra inflorescentium paucis vel nullis, saepe ramulis brevibus foliosis congestis e foliorum summorum axillis ortae. *Folia* sessilia, auriculis nullis vel simplicis vel bidentatis, supra auriculas subpetiolata cuneata glabrescentia, laminae foliorum costis subtus manifeste tumidis; folia basilia 10-13 cm longa, 1.5-2.5 cm lata, oblanceolata, grosse dentata, vulgo marcida vel abscissa ante anthesin; folia media 6-10 cm longa, 0.4-0.8(-1.2) cm lata, anguste oblanceolata vel linearia, irreguliter dentata vel aequaliter denticulata; folia superne similaria sed reducta. *Inflorescentia* corymbosa

erecta glabra vel puberula, capitulis 10-25, pedicelli ad 5-10 mm longi, bracteae et bracteolae late subulatae apicibus fuscatis. *Capitula* 5-6 mm longa, phyllaria involucri 8 or 9(-11), 4.5-5 mm longa, ca. 0.5 mm lata, binervia, valde carinata in alabastro, applanata per anthesin, demum rigescentia late extendentia post fructificantem, apicibus fuscatis ciliolatis. *Flosculi* numero 8-16(-21); flosculus pistillatus 4.5-5 mm longus, basi 0.2-0.25 mm diametro, tubo filiformi, apice tenuiter infundibuliformi; flosculi pistillati extimi 3-fidi, intermedii 4-fidi; flosculi medii perfecti 5-5.5 mm longi infundibuliformi 4- vel 5-fidi, ramis stylosum 0.5 mm longis. *Achenia* 2.5 mm longa subcylindracea non rostrata ferruginea, porcis decem latis humilibus planis, trichomatibus 0.1 mm longis subappressis in sulcis perangustis; pappus pilis, tenuibus niveis, flosculos aequans, demum phyllaria excedens ad 2 mm.

Similis ad *S. biserratum* sed foliis angustioribus minus grosse dentatis, flosculis extimis 3-fidis vice 5-fidorum, et ramis stylosum magnitudine dimidiatis. Ab *S. minimo* differt in achenio longiore trichomatibus in sulcis non insidens porcio, in folio angustiore et magis irreguliter dentato, et in phyllario brevioris et grosso.

*Rootstock* perennial. *Stems* woody below, erect, to 60-120 cm tall, glabrescent, with few or no major branches below the inflorescence, often with short branchlets congested with leaves and borne in the axils of the uppermost leaves. *Leaves* sessile, with auricles lacking or simple or bidentate, above the auricles subpetiolate and cuneate, glabrescent, the blades of the leaves with midribs obviously swollen on the undersides; lower leaves 10-13 cm long, 1.5-2.5 cm wide, oblanceolate, coarsely dentate, generally withering or abscissing prior to anthesis; middle leaves 6-10 cm long, 0.4-0.8(-1.2) cm wide, narrow-ob lanceolate or linear, irregularly dentate or equally denticulate; upper leaves similar but reduced. *Inflorescence* corymbose, erect, glabrous or puberulent, with 10-25 capitula per corymb on pedicels 5-10 mm long, bracts and bracteoles broadly subulate with apices darkened. *Capitula* 5-6 mm long, phyllaries of the involucre 8 or 9(-11), 4.5-5 mm long, 0.5 mm wide, two-nerved, strongly keeled in bud, flattening at anthesis, eventually becoming rigid and widely extended after fruiting, the apices darkened and ciliolate. *Florets* 8-16(-21) in number; the pistillate floret 4.5-5 mm long, 0.2-0.25 mm in diameter at the base, with the tube filiform, its apex slenderly infundibuliform; outermost pistillate florets 3-fid, intermediate pistillate florets 4-fid, the central florets perfect, 5-5.5 mm long, infundibuliform, 4- or 5-fid, branches of the styles 0.5 mm long. *Achenes* 2.5 mm long, subcylindrical, non-rostrate, reddish-brown, with ten broad low flat ridges, with trichomes 0.1 mm long, subappressed in the very narrow grooves; pappus with hairs slender, snowy white, equalling the florets, eventually exceeding the phyllaries by 2 mm.

Similar to *S. biserratus* Belcher but with leaves more narrow and less coarsely toothed, the outermost florets 3-fid instead of 5-fid, and the branches of the styles only half as long. Differs from *S. minimus* Poir. in the slightly longer achene with trichomes in the grooves instead of on the ridges, in the narrower and more irregularly toothed leaf, and in the shorter and coarser phyllary.

#### TYPE COLLECTION:

*Victoria* — East Gippsland, Buchan River near junction of Reedy River, 6.ii.1973, A. C. Beaglehole 41406 (Holotype: MEL 501429. Isotype: MEL 501428).

#### SELECTED SPECIMENS EXAMINED:

*Western Australia* — Wellington District, State Forest #15, approx. 16 km SE. of Harvey, in jarrah forest dieback area partially burned in 1965, 25.viii.1967, Cahill 22 (PERTH). Ibidem, 13.x.1967, R. & R. Belcher 245, 250 (EMC). Pasture on Roelands — Collie road about 13 km east of South Western Highway, 30.ix.1967, R. & R. Belcher 183 (EMC).

*Queensland* — Bunya Mountains, between Noobler's Lookout and Burton's Well, 29.xi.1967, Belcher 810-A (EMC). Gympie, Kenny (BR1 073659).

*New South Wales* — Warragamba Dam area, half a mile S of Nattai Junction, 23.ii.1967, Briggs 1118 (NSW 95691). Central Tablelands, Mt. Victoria, 15.i.1892, Fletcher (NSW 27821). Maryland, Wylie Creek road turn-off, 10.i.1956, M. Gray (CANB 97679). Central Coast, Hill Top, i.1903, Maiden (F; NSW 27819). New England, Goff's Gully, iii., C. Stuart (MEL 22750).

*Victoria* — East Gippsland, Timbarra River, Old Ensay Track, 14.xii.1970, A. C. Beaglehole 35491 (EMC; MEL 540861).

#### DISTRIBUTION:

Eastern slopes of the Great Dividing Range from south-eastern Queensland abundantly through New South Wales to East Gippsland in Victoria; recently locally adventive in south-western Western Australia.

## DISCUSSION:

The specific epithet recognises Mr. C. O. Cahill, Weed Control Officer at Bunbury, Western Australia, in 1967. He was the first to refer material of this taxon from that State for identification and also kindly directed me to occurrences in his area. The species had become locally common as an aggressive invader in paddocks. It also occurred in jarrah forest on dieback areas produced by the root parasite, *Phytophthora cinnamoni*. Ecological data on the labels of the many New South Wales collections held at the National Herbarium of that State strongly suggest a preference for moist stream sides and disturbed areas.

*S. cahillii* is best recognised in the field by its very erect habit, lack of lower branches above the basal stool (from which it may sprout very prolifically to form large clumps) and especially by the densely crowded branchlets in the axils of the upper leaves, the leaves of these branchlets being short and linear or nearly so. The isotype (MEL 501428) is unusual in that the right-hand specimen has 3 large flowering branches from fairly low on the stem. This, however, is due to the main stem having been broken off earlier, just above the origin of the branches.

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